## Claims

1. An apparatus for attaching a prosthetic limb to the bone of a patient to failsafe if excess force is applied to the limb, the apparatus comprising:

a proximal component to mount to a bone implant ;

a distal component to mount to a prosthetic limb ; and

a coupling body coupling together the proximal and distal components with freedom to articulate when, in use, a bending and/ or torsional force is applied to the prosthetic limb only when the force exceeds a threshold safe level whereby the force may be accommodated by articulation within the attachment apparatus.

2. An apparatus as claimed in Claim 1, wherein the apparatus is incorporated into the bone implant component or the prosthetic limb , being in part or wholly, integrally formed or assembled with the bone implant or the limb prosthesis.

3. An apparatus as claimed in Claim 1, wherein the coupling body has a clutch-like mechanism to rotationally couple the prosthetic limb to the bone implant in use but which automatically disengages, rotationally decoupling the prosthetic limb from the bone implant, when torque applied to the prosthetic limb exceeds a predetermined threshold.

4. An apparatus as claimed in Claim 3, wherein the apparatus has a resilient biasing means whereby the clutch mechanism is resiliently biased to the rotationally coupled state and whereof the biasing force applied to the clutch-like mechanism by the resilient biasing means in use determines the threshold level of torque on the prosthetic limb that will cause disengagement of the clutch.

5. An apparatus as claimed in Claim 3, wherein the apparatus has adjustment means whereby the threshold level of torque on the prosthetic limb that will cause disengagement of the clutch-like mechanism may be increased or decreased.

6. An apparatus as claimed in Claim 5 as dependent on Claim 4, wherein the adjustment means comprises a screw adjustment means that is screw-threadedly adjustable axially toward or away from the clutch-like mechanism.

7. An apparatus as claimed in Claim 3, wherein the clutch-like mechanism has opposing sets of co-operating clutch teeth whereof the teeth are substantially symmetrical in profile whereby the clutch-like mechanism may be disengaged in either rotational direction of torque, clock-wise or anti-clockwise, applied to the prosthetic limb.

8. An apparatus as claimed in Claim 3, wherein the clutch-like mechanism is on the proximal component but is configured to be located external to the patient's skin in use so that there will be no tearing of the patient's skin when the clutch-like mechanism disengages.

9. An apparatus as claimed in Claim 1, wherein the coupling body has an automatically disengageable connector that couples together the proximal and distal components so that one is in a fixed angle relation to the other (e.g. axially aligned with or at a fixed angle of incline to the axis of the other) in normal use, but with freedom to articulate away from the fixed angle relation when, in use, a bending force is applied to the prosthetic limb only when the force exceeds a threshold level.

10. An apparatus as claimed in Claim 1, wherein the apparatus with disengageable connector has a resilient biasing means whereby the disengageable connector is resiliently biased to the coupled state and whereof the biasing force applied to the disengageable connector by the resilient biasing means in use determines the threshold level of bending force on the prosthetic limb that will cause disengagement of the disengageable connector.

11. An apparatus as claimed in Claim 10, wherein the disengageable connector comprises a pin mounted to one of the proximal and distal components and co-operating with a socket in the other of the proximal and distal components.

12. An apparatus as claimed in Claim 11, wherein the pin is mounted to be movable back and forth axially of the component to which it is mounted and is biased forwardly.

13. An apparatus as claimed in Claim 11, wherein the pin has a pointed or domed tip and the socket is of a corresponding concave shape whereby a bending

force applied to the prosthetic limb in use will cause the tip of the pin to ride outwardly up the socket wall.

14. An apparatus as claimed in Claim 13, wherein the shape of the tip is domed or substantially conical to facilitate disengagement of the disengageable connector whichever radial orientation the bending force is applied from.

15. An apparatus as claimed in Claim 9, wherein the disengageable connector is configured to allow gyrating articulation or universal articulation, substantially in the manner of a ball joint, when it disengages.

16. An apparatus as claimed in Claim 9, wherein the disengageable connector comprises a T-shaped formation at the end of one or both of the proximal and distal components that are adjacent each other, the head of the or each T-shaped formation being curved/ arcuate to facilitate tilting of one component relative to the other.

17. An apparatus as claimed in Claim 16, wherein the T-shaped formations are accommodated in the coupling body, or a further coupling body, to tilt within the coupling body.

18. An apparatus as claimed in Claim 17, wherein the coupling body has slots therethrough, through each of which a respective end of a head of a T-shaped formation extends and whereby the end may protrude to a greater or lesser extent as the component tilts, whereby the coupling body provides a captive articulated joint with a restricted degree of tilting freedom of movement.

19. An apparatus as claimed in Claim 17, wherein one T-shaped formation is oriented in the coupling body with its head substantially orthogonal to the head of the other, whereby through tilting of each relative to the other an approximately universal or gyrating articulation may be achieved.

20. An apparatus as claimed in Claim 1, wherein a coupling part of the apparatus has a shear pin means whereby the apparatus will uncouple at the coupling part through shearing of the shear pin means if an excess tensile distracting force is applied to it.

21. An apparatus as claimed in Claim 20, wherein the coupling part is formed at or in the proximal component and the shear pin is demountable or retractable whereby the apparatus and prosthesis may be demounted by the user.

22. An apparatus for attaching a prosthetic limb to the bone of a patient to failsafe if excess force is applied to the limb, the apparatus comprising:

a proximal component to mount to a bone implant ;

a distal component to mount to a prosthetic limb ; and

a coupling body coupling together the proximal and distal components with freedom to articulate when, in use, a bending and/ or torsional force is applied to the prosthetic limb only when the force exceeds a threshold safe level whereby the force may be accommodated by articulation within the attachment apparatus, wherein the coupling body has an automatically disengageable connector that couples together the proximal and distal components so that one is in a fixed angle relation to the other (e.g. axially aligned with or at a fixed angle of incline to the axis of the other) in normal use, but with freedom to articulate away from the fixed angle relation when, in use, a bending force is applied to the prosthetic limb only when the force exceeds a threshold level.

23. An apparatus for attaching a prosthetic limb to the bone of a patient to failsafe if excess force is applied to the limb, the apparatus comprising:

a proximal component to mount to a bone implant ;

a distal component to mount to a prosthetic limb ; and

a coupling body coupling together the proximal and distal components with freedom to articulate when, in use, a bending and/ or torsional force is applied to the prosthetic limb only when the force exceeds a threshold safe level whereby the force may be accommodated by articulation within the attachment apparatus, and wherein the coupling body has a clutch-like mechanism to rotationally couple the prosthetic limb to the bone implant in use but which automatically disengages, rotationally decoupling the prosthetic limb from the bone implant, when torque applied to the prosthetic limb exceeds a predetermined threshold and wherein the apparatus has adjustment means whereby the threshold level of torque on the prosthetic limb that will cause disengagement of the clutch-like mechanism may be increased or decreased.